



SPARK GAP

Vol. 35, Issue 12, December 2018 *MARC - Serving Central Indiana Communities for thirty-five years*

On our MARC:

Season's Greetings!

A New Year is right around the corner. Where did the year go? I would like to thank everyone for all they have done for the club in 2018. Together, we have accomplished a lot.

Saturday, Dec. 15th at 8:00 a.m., we will have our annual Christmas pitch breakfast and club meeting. We will also be having a white elephant gift exchange. For your viewing pleasure we will also get a chance to see the premier of the MARC year-in-review video from Parker Productions. We hope that you will be able to join us.

Would like to take this time to thank Rusty again for working with the Scouts. The VE tested the Scouts on Nov 19th. No Scouts passed their test however, two adults did. I believe one was the Scout Master. Again, thank you Rusty!

Just a reminder that Dec. 31st marks the end of our membership year. It is time for all of us to renew our dues and support our club. At \$18 per year, a MARC membership is one of the best deals around. Please see Ron, K9THR, about getting your dues current for 2019.

Finally, I would like to wish everyone a Merry Christmas and a Happy and safe New Year!! May your holiday season be filled with the joy of family, friends and peace. May good health and prosperity be yours in 2019.

Jacki K16QOG
President





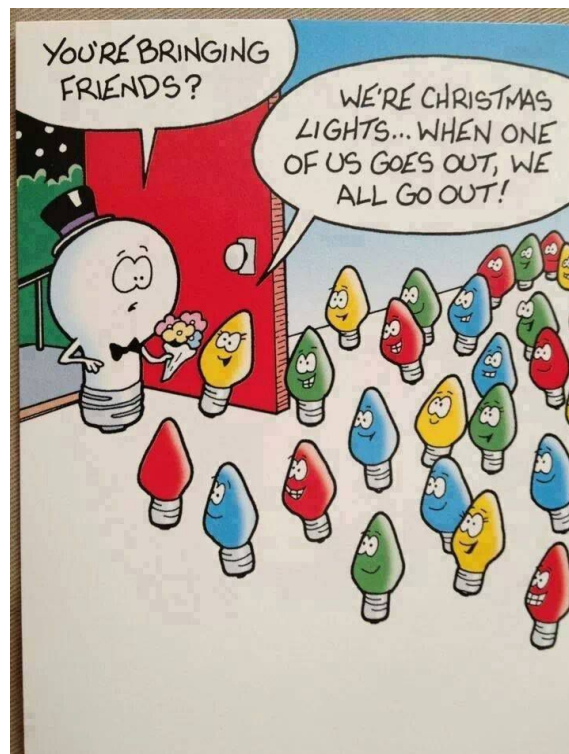
Birthdays for the month of December:

AE9H-Phil Melick

KC9YIA-Chris Rose

N9LLP-Rusty Kirts

KQ9Y-Chris Frederick



Big changes ahead for ARRL board

By Dan Romanchik, KB6NU

The results are finally in. No, I'm not talking about the national mid-term election results. As I'm writing this, some of those votes are still being counted. I'm talking about this year's ARRL board elections. ARRL members have spoken, and they have elected four new faces to the board in what was the most hotly-contested election in a long time.

Three of the five incumbents, plus an incumbent vice director running for the Northwest Division director position, were defeated by candidates calling for more transparency and for changes in the way that the ARRL operates.

Here are the results:

Central Division Director

- Kermit Carlson, W9XA 1,898
- Valerie Hotzfeld, NV9L 1,755

Hudson Division Director

- Ria Jairam, N2RJ 1,292
- Mike Lisenco, N2YBB 1,239

New England Division Director

- Fred Hopengarten, K1VR 1,432
- Tom Frenaye, K1KI 1,383

Northwestern Division Director

- Mike Ritz, W7VO 1,589
- Bonnie Altus, AB7ZQ 1,308
- Horace Hamby, N7DRW 495

Roanoke Division Director

- George Hippisley, W2RU 1,891
- Dr. James Boehner, N2ZZ 1,365

In the only two contested vice director elections, Mark Tharp, KB7HDX defeated Daniel Stevens, KL7WM and Delvin Bunton, NS7U in the Northwest Division and in the Roanoke Division, William Morine, N2COP defeated John Humphry, W4IM. All newly elected officials will take office at noon on January 1, 2019.

I was kind of surprised here that Valerie Hotzfeld, NV9L, failed to win in the Central Division. She has certainly made many contributions to amateur radio, both in the DX/contest community and on *Ham Nation*. Apparently, though, she made some statements that she was forced to retract, and that probably hurt her campaign, and as some pointed out to me, Kermit Carlson, W9XA, was well thought of in the Central Division and in the VHF/UHF community.

Overall, though, I'm very pleased with the results. Although some of the margins of victory were small—K1VR won by only 49 votes and N2RJ won by 53 votes—I think it's pretty clear that the members want change. Now, it's up to the board, including its newest members to effect that change. As always, I'm ready to help in any way that I can.

When he's not keeping up with ARRL politics, Dan blogs about amateur radio, writes exam study guides (www.kb6nu.com/study-guides), and operates CW on the HF bands, and lately some digital modes as well. Look for him on 30m, 40m, and 80m. Please email him your thoughts about the ARRL at cwgeek@kb6nu.com.

Broadcasters Intruding on Exclusive Amateur Radio Frequencies

The International Amateur Radio Union Region 1 (IARU-R1) Monitoring System (IARUMS) reports that Radio Hargeisa in Somaliland has returned to 7,120 kHz after a break of several weeks, while Radio Eritrea has been reported on 7,140 and 7,180 kHz. Radio Sudan has been transmitting on 7,205 kHz with excessive splatter, IARUMS said. German telecommunications authorities have filed official complaints.

IARUMS has also reported digital signals attributed to the Israeli Navy on 7,107 and 7,150 kHz. In addition, a Russian military F1B signal was observed in mid-November on 7,179 kHz. A Russian over-the-horizon radar has returned to 20 meters on 14,335 – 14,348 kHz. It was monitored on November 22. Earlier this fall, IARUMS reported digital signals from the Polish military daily on 7,001.8 kHz where Amateur Radio has a worldwide primary allocation. Telecommunications officials in Germany filed a complaint.

IARUMS has received reports of short “beeps” exactly 1 second apart, as well as frequency hopping between 10,108 and 10,115 kHz and 18,834 and 18,899 kHz. The signals are believed to emanate from a site near Chicago associated with an FCC-licensed Experimental operation involved with low-latency exchange trading on HF (see “Experiments Look to Leverage Low-Latency HF to Shave Microseconds off Trade Times”). Although Amateur Radio is secondary on 30 and 17 meters, Experimental licenses may not interfere with Amateur Radio operations.

..... *ARRL NEWS --- December 2018*

BITX 40 "semi-kit"

Although most of us build from scratch, kits have some advantages; all of the components are available, the layout is done, others have had it working, you just need to assemble it. Heathkit refined this to an art and many of us learned the basics of assembly and testing from their products. Now Ashhar Farhan, VU2ESE, has made a version of his BITX (BI-directional Transceiver) available to the world as a “semi-kit”, with control and transceiver boards pre-assembled and shipped with most of the external parts needed to build your own single band SSB transceiver.

This saves the builder the tedium of loading and soldering the board. He can install it in any form that he wishes, as a nice portable in a weather resistant case, or perhaps in a big solid cabinet for the shack. He can spend his time dressing it up and adding features.

For a mere \$59 USD (about £46) the BITX40 is shipped to your door with the 4.5” x 5” printed circuit board, the “Raduino” VFO module, two 3-conductor 3.5mm audio jacks, a volume control with power switch, a 10K linear taper potentiometer (for tuning), a BNC antenna jack, a set of power connectors, an electret microphone element, a push button switch, and all of the connecting wires needed to wire it up (with plugs attached!). Not only that, but 8 brass stand-offs, mounting nuts and bolts included. The boards are all assembled and tested, just waiting for the drive to be set for the Power Amplifier.

The transceiver is the simple single-conversion superhet design originally conceived by Farhan more than a decade ago. During the ensuing years it has been constantly refined and is now a logically arranged, cleanly designed module with large-format surface-mount components on an uncrowded board. This is ideal for modification and servicing. There is nothing better for demonstrating theory to beginning hams and engineers. The board “reads” like a schematic. Signals flow in easily traceable directions through clearly identified components. Test probes have easy access to all parts of the circuitry, unlike most “through-hole” equipment. A real joy to explore.

The BITX was originally designed to use an analog VFO. In fact, the current model is delivered with everything needed to use it analog fashion. A single-turn 10K pot controls the varactor-tuned VFO so you can enjoy the clean sound and simplicity. However, like the Epiphyte and other rigs that use analog VFO, the operator needs to frequently re-touch the tuning to compensate for the drift. We are used to that, right? The problem is made larger by the huge available tuning range. That single turn for over 100 KHz makes for a fine touch, indeed!

Fear not! The BITX40 now includes a spectacular answer, the Raduino. The name is a combination of “Radio” and “Arduino”. If you haven't met the Arduino line of microcontroller boards then you are in for a treat. They are widely available at give-away prices, plug into a usb port on your computer, and are easily programmed using free software. They are like a Swiss army knife, an electronic multi-tool, limited only by your imagination. The Raduino employs the thumb-sized Arduino Nano to control a tiny (yet powerful) Silicon Labs Si5351 three-output synthesizer and a two line 16 character LCD display in a single VFO module. Rock stable, clean output, and reliable. Having a tiny computer in the module makes it possible to configure it do work the way that *you* want it to. It is fast, uses little power, and has extra pins to add a bounty of features.

To use the Raduino as the VFO, one re-uses the tuning pot for control, disconnecting one end of the original VFO inductor, and plugging the output of the Raduino into a jack labelled “DDS”. The Raduino comes already programmed for a unique tuning solution using the pot to tune 50 KHz portions but reserving spaces at each end where the same knob can step up or down in 10 KHz increments. A plethora of features is provided by the original software (written by Farhan and is, in itself, a course in programming) that includes two VFOs, RIT, CW, calibration, and memory operation.

Want to try different software? Other tuning modes? Want to add features? There are scores of choices available free from the Internet. Join the BITX20 group at <https://groups.io/g/BITX20> for a very active (and talented) group just waiting to help and answer questions. Read the postings on <http://bitxhacks.blogspot.com/> for ideas. Doesn't work like you think that it should? Then program your own “sketch” (the Arduino name for software). It's easier than you think. Remember that you can reload the old program at any time.

The radio module uses mostly discrete components. Even the mixers use hand-wound toroids. The transmit output transistor is an IRF510 and has a separate DC power input jack so that if you want to run more than the 5 to 7 watts PEP that 12 volts provides, you can connect up to 25 volts and run 20 watts. If you do run higher power then be advised to use a larger heat sink than what is provided.

Knobs, speaker, or headphones are not included. You would want to use styles and sizes appropriate for your enclosure anyway. This is an advantage over most kits in this respect. You buy the pre-tested works and give it form.

The 4 crystal Cohn IF filter yields good sideband suppression while maintaining clear audio performance and selectivity. The crystals are hand-picked and matched before installation. For a single conversion receiver, there are few spurious signals. It is very quiet without the usual NE602 mixers, yet quite sensitive.

Overall, an incredible value. A true single sideband transceiver, complete with configurable digital control (or not!) for less than many most CW only sets. All of the drudgery of basic assembly is done for you. All that remains is to individualize it and have fun.

Check it out at: <http://www.hfsignals.com>

de ND6T



FCC Approves Use of Galileo Global Navigation Satellite System in the US

The FCC has granted, in part, the European Commission's request for a waiver of Commission rules so that non-federal devices in the US may access specific signals transmitted from the Global Navigation Satellite System (GNSS) known as Galileo. The action means that consumers and industry in the US may access certain satellite signals from the Galileo system to augment the US Global Positioning System (GPS). The *Order* said that the Galileo GNSS is uniquely situated with respect to the US GPS, because the two systems are interoperable and RF compatible.

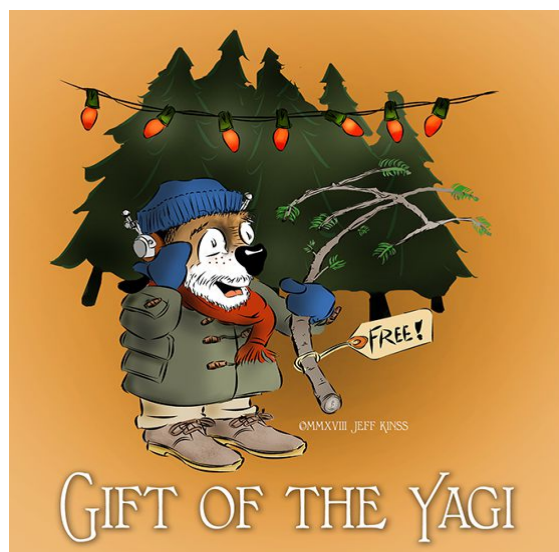


Specifically, the *Order* permits access to two of the Galileo system's satellite signals -- the E1 signal transmitted in the 1,559 - 1,591 MHz portion of the 1,559 - 1,610 MHz Radionavigation-Satellite Service (RNSS) band, and the E5 signal transmitted in the 1,164 - 1,219 MHz portion of the 1,164 - 1,215 MHz and 1,215 - 1,240 MHz RNSS bands. These are the same RNSS bands in which the US GPS satellite signals operate.

The *Order* does not grant access to the Galileo E6 signal, which is transmitted over the 1,260 - 1,300 MHz frequency band, because this band is not allocated for RNSS in the US or used by the US GPS to provide position/navigation/timing (PNT) services. The FCC pointed out that granting access to the Galileo E6 signal could constrain US spectrum management in the future in spectrum above 1,300 MHz, where potential allocation changes are under consideration.

The omission of the E6 signal also means that radio amateurs would not have to protect Galileo receivers from interference on 23 centimeters, which has been a significant issue in Europe.

..... ARRL News ---- November 2018



BUY, SELL OR TRADE

Complete HF Station for Sale

This station has been in storage and the owner wants to see his equipment in a good home and in use again. The station has the following equipment for sale.

Icom IC-745 HF transceiver with Matching speaker

Heathkit SB 614 Station Monitor

12 Volt Power Supply , Regulated and filtered, 50 Amp

Linear Amplifier, 2,000 watt ssb, 1,000 watt cw.

MFJ Grand Master Memory Keyer Model MFJ-484B
and Dual paddle, Benchner key to drive the
keyer

Heath Model HM-102 Power Meter

Tram Diamond 60 CB rig converted to 10 meters
ssb/am qrp rig.

Rohn HDBX 48 Self supporting , 48 foot
tower.

Cornell –Doubler Model AR-III Rotor motor with Automatic
rotor controller.

2 Meter FM Transceiver (mobile)
Kenwood TM-2550A s/no 7010221

2 meter FM Transceiver (mobile)
Kenwood TR 7950 s/no 3030170 45 watts out

2 Meter FM Handi Talkie Transceiver Kenwood TR 2500

Connect Systems Inc. Simplex Autopatch Used on 2 meter FM

Icon IC-34A 220 Mhz FM Transceiver

Please Contact Richard KE8SW at rwglover@comcast.net for prices and pictures of what is for sale.

UP – COMING ACTIVITIES AND HAMFESTS

12/15/2018 – 0800 MARC Monthly & Christmas Holiday Pitch-in Breakfast

Johnson County REMC 750 International Drive Franklin, IN 46131.

01/19/2019 -- 0800 MARC Monthly meeting at the Johnson County REMC.

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02/16/2019 -- 0800 MARC Monthly meeting at the Johnson County REMC.

Johnson County REMC 750 International Drive Franklin, IN 46131.

03/16/2019 -- 0800 MARC Monthly meeting at the Johnson County REMC.

Johnson County REMC 750 International Drive Franklin, IN 46131.

04/20/2019 -- 0800 MARC Monthly meeting at the Johnson County REMC.

Johnson County REMC 750 International Drive Franklin, IN 46131.

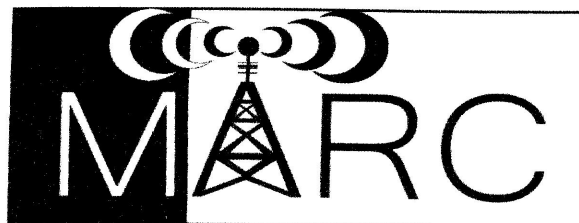
05/18/2019 -- 0800 MARC Monthly meeting at the Johnson County REMC.

Johnson County REMC 750 International Drive Franklin, IN 46131.

05/17,18 ,19/2019 – Dayton Hamvention, Greene County Fairgrounds and Expo Center in Xenia,OH

06/15/2019 -- 0800 MARC Monthly meeting at the Johnson County REMC.

Johnson County REMC 750 International Drive Franklin, IN 46131.





MID-SATE AMATEUR RADIO CLUB

The Mid-State Amateur Radio Club meets the **THIRD SATURDAY** of each month at the Johnson County REMC 750 International Drive Franklin, IN 46131.

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a *HAM* to attend our meetings or a member of the club.

WA9RDF Repeater:

146.835/
146.235 MHz
(151.4 Hz PL Tone)

Club Officers:

President: Jacki Frederick – KI6QOG
Vice President: Bill Jackson – KM6CRL
Secretary: Rhonda Curtis – WS9H
Treasurer: Ron Scheutz – K9THR
Repeater Trustee - Chris Frederick – KQ9Y

WA9RDF Repeater:

443.525/
448.525 MHz
(151.4 Hz PL Tone)

Weekly Net: Sunday evening 7:00 PM ARES/RACES members and ALL RADIO AMATEURS
146.835/146.235 MHz (151.4 Hz PL Tone)

The Official Newsletter of the Mid-State Amateur Radio Club

P.O. Box 836
Franklin, Indiana
46131

Spark Gap Editor: Robert LaGrange N9SIU

Please send your articles to my email: n9siu@yahoo.com no later than the 3rd of the month



Special thanks to Johnson County REMC for the use of their community room for meetings and testing.